Late Mediastinal Hematoma Followed by Incisional Metastasis After Video-Assisted Mediastinoscopy

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Cervical mediastinoscopy plays an important role for diagnosis and staging of lung cancer. Rare complications, mostly bleeding or mediastinal hematoma arrived in the preoperative or immediate postoperative period.[1] Distantly, incisional metastases are uncommon.[2] We report an unusual case of late compressive mediastinal hematoma revealed by scar bleeding followed by cervical incisional metastasis.

CASE REPORT

A 76-year-old man was admitted in our department for suspicion of lung cancer. He never smoked, and he had surgery for benign prostate adenoma (4 years before). Because of persistent cough, a complete check up identified a lesion in the right upper lobe with no expression in flexible bronchoscopy; this lesion was highly suspicious of a malignant tumor, which could be clinically classified as T2N2M1, stage IV (vertebral metastasis on positron emission tomography scan). Video-assisted mediastinoscopy (VAM) was performed for diagnostic and staging purpose (with Linder-Dahan mediastinoscope of Karl Storz Company, Germany). Histology showed adenocarcinoma. The postoperative course was uneventful. The patient began chemotherapy 1 week later. Five weeks later, he presented an increasing shortness of breath and active bleeding from the cervical scar. Urgent surgery was decided. At operation, the orotracheal intubation was performed with difficulty because of an important compression of the tracheal tree. After reopening of cervical incision, we identified a pretracheal hematoma. The mediastinal space was explored with VAM. No source of active mediastinal bleeding was identified. A small drain was left in place for 48 hours. The postoperative course was uneventful; the patient was extubated 12 hours after surgery and discharged from hospital 4 days after. One week later, persistent leaking was noted on the cervical scar. The liquid was serous, and the cytology showed some atypical cells. Daily bandages were started. In the next 3 weeks, a slowly growing mass appeared on the cervical scar (Figure 1). The samples confirmed the same histology. Fatal outcome occurred 1 month later.

Comments

Cervical mediastinoscopy is a well-documented procedure for diagnosis and staging of lung cancers. Morbidity is extremely low.[1] Our case raises two problems, two different complications. First, there is the mediastinal hematoma. Usually, bleeding complications occurred in the intraoperative period. Active control is necessary and normally successful. Wound or mediastinal hematoma can be identified in the immediate postoperative period, and generally, it can be simply evacuated. During VAM, several vascular landmarks need to be identified. Although arterial or venous structures (aorta, inomminate artery, and azygos vein) are easily viewed, we must not forget any bronchial artery that passes from the left to the right in the operative channel, which could spare us for any perioperative or postoperative complications. But our case presented a mediastinal hematoma 5 weeks after VAM. The mechanisms are difficult to explain. Perhaps, the chemotherapeutic agents provoked necrosis of the lymph nodes. Because of previous biopsy, the nodes were "opened" and bleeding occurred. Compressive mediastinal hematoma arrived, forcing the previous operative channel with consequent hemorrhage. The patient presented with increasing dyspnoea, then active bleeding from the cervical scar. To our knowledge, this is the first reported case of late mediastinal hematoma after VAM.

The second complication is the incisional metastasis. Neoplastic seeding along biopsy tract is a well-known phenomenon. Incisional recurrences after standard mediastinoscopy are uncommon, and an overall incidence of 0.12% was reported.[2] With the advent of video techniques, VAM improves the results of conventional mediastinoscopy,[3] but incisional metastasis was not reported yet. In our experience (since 1998, more than 850 VAM procedures), this is the first case (incidence of 0.11%). Despite lesser complications rate of VAM than conventional method,[3] the incidences of incisional metastases seem to be equal. The mechanism remains uncertain, but in case of positive lymph nodes at the time of VAM, the direct implantation seems a reasonable explanation.[4] Perhaps, the hemorrhage dissected the pretracheal space allowing tumor fragment migration; or by reopening the operative channel, we reimplanted microscopic tumors foci. The treatment of such complication is difficult to estab-

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FIGURE 1. Incision metastatic implant after video-assisted mediastinoscopy.

lish, and we do not know how to prevent it. This situation is too rare to warrant routinely inclusion within the original radiation field.[5] Theoretically, by irradiating the scar, any microscopic implantation metastasis would be unable to grow. Chemotherapy can be given, but patients died shortly after. Our patient had a stage IV disease, but the incisional growth occurred under chemotherapy, and he died 3 months after the first VAM. In the international literature, six reported cases were found after conventional mediastinoscopy.[4–8] The interval between the appearance of the incisional metastasis and the mediastinoscopy ranged from 6 weeks to 6 months. All types of cells cancer were encountered, and all but one had positive mediastinal lymph nodes proved by mediastinoscopy. The local treatment consisted on radiotherapy, but we have not much information about the follow-up except one case treated by surgery + radiotherapy and chemotherapy. This patient was alive and free of disease, 13 months after the treatment of incisional metastasis.[4]

Our case has its particularities. First, a late mediastinal hematoma occured, then incisional iatrogenic metastasis. Whether it testifies an aggressive disease is to be determined, but it reflects the limitations of our current methods to determine the biologic behavior of cancers.

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